**TNHA Curriculum Planning Document** Subject: Science Year: 10

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| **Timescale** | **Autumn** | **Spring** | **Summer** |
| **Prior Learning (from KS2/3)** | Yr 7- What am IYr 7 - Sports ScienceYr 8- HospitalYr 8 – FarmYr 9- CellsYr 9- OrganisationYr 9- Energy | Yr 7- ScientistYr 8- CSIYr 9- BondingYr 9- AtomsYr 9- Quantitative chemistry | Yr 8 – PowerYr 9- Atoms | Yr 7- What am IYr 8- HospitalYr 9- CellsYr 9- Organisation | Yr 7 – OceansYr 7 – SportsYr 8 - CSIYr 9- Atoms | Yr 7- CarsYr 7- SpaceYr 8 – Theme | Yr 7- What am IYr 7- DinosaursYr 7- ZooYr 9- CellsYr 9- Infections | Yr 7- DinosaursYr 7 – OceansYr 8 - CSIYr 8 – PowerYr 9- BondingYr 9- Atoms | Yr 7 – OceansYr 8- DiscoYr 9- Energy |
| **Topic/ Unit title** | **Biology**Biological Reactions (Bioenergetics)Photosynthesis and Respiration | **Chemistry**Chemical ReactionsAcids and Alkalis, Neutralisation, electrolysis, Salts | **Physics**Atomic structureRadiation, Half life, atomic structure. | **Biology**Homeostasis & responseReflex actions, Glucose control, Menstrual cycle | **Chemistry**Rates of ReactionEffect of temperature, pressure and concentration on rates of reaction. Collision theory. | **Physics**ForcesForces, resultant forces and velocity. Distance time graphs. Stopping distances. | **Biology**Inheritance, variation & evolutionGenes, Inheritance, reproduction, Punnett squares, Evolution and Extinction | **Chemistry**Organic ChemistryHydrocarbons, Alkene, Alkanes and Cracking. | **Physics**WavesThe electromagnetic spectrum,Properties of waves and uses. |
| **SMSC/Cultural Capital/Character/FBV- outline specific areas that are covered in this unit** | The impact of exercise The consequences of deforestationFarming: The use of technology to help with world hunger.Group work. | Group work.The importance of alkali solutions in first aid kits in major cities. Environmental impact of gaining/using metal ores. | Group work.Safety in radiation.Worlds responsibility for Chernobyl. | Beliefs around contraceptionFocus on the ethics behind IVFGroup work. | Group work.Industry use to increase cost effectiveness vs. Environmental impact.  | Investigating stopping distances and factors that affect these in relation to driving cars unsafely.Group work. | Genetic Engineering and cloning - Use understanding of cloning techniques to evaluate whether embryo cloning should be allowed.Group work.Evaluate the human impact on extinction.  | Consider the impact of multiple chemical and industrial processes on the environment - including the combustion of hydrocarbons and the impacts of global warming and acid rain on the environment.Group work. | Group work.Industrial use of EM Spectrum.The effect of the EM spectrum on the human body.  |
| **Assessment Opportunities** | Each unit is assessed by an end of topic test. During the year students will be assessed on their Working Scientifically skills.These include: Graph drawing, practical planning, error identification, Conclusion writing.  |
| **Links to other units in KS3/4.** | Yr 7- What am IYr 7 - Sports ScienceYr 8- HospitalYr 8 – FarmYr 9- CellsYr 9- OrganisationYr 9- EnergyYr 11- Ecology  | Yr 7- ScientistYr 8- CSIYr 9- BondingYr 9- AtomsYr 9- Quantitative chemistryYr 10- Rates | Yr 8 – PowerYr 9- AtomsYr 10 - Waves | Yr 7- What am IYr 8- HospitalYr 9- CellsYr 9- Organisation | Yr 7 – OceansYr 7 – SportsYr 8 - CSIYr 9- AtomsYr 10- Chemical reactionsYr 10 – Organic chemistry | Yr 7- CarsYr 7- SpaceYr 8 – Theme | Yr 7- What am IYr 7- DinosaursYr 7- ZooYr 9- CellsYr 9- InfectionsYr 10- Biological reactionsYr 11- Ecology | Yr 7- DinosaursYr 7 – OceansYr 8 - CSIYr 8 – PowerYr 9- BondingYr 9- Atoms | Yr 7 – OceansYr 8- DiscoYr 9- EnergyYr 10- Atomic StructureYr 11- Electromagnetism  |

**TNHA Curriculum Planning Document** Subject: Science Year: 11

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| **Timescale** | **Autumn** | **Spring** | **Summer** |
| **Prior Learning (from KS2/3)** | Yr 7- ZooYr 8- DinosaursYr 9- Chemical ReactionsYr 10- Biological reactionsYr 10 - Inheritance, variation & evolution | Yr 7- ScientistsYr 7- EarthYr 8- CSIYr 9- Atoms | Yr 8 DiscoYr 8 PowerYr 9- ElectricityYr 10 - Waves | GCSE Specification- Trilogy AQA 8464 |
| **Topic/ Unit title** | **Biology**EcologyClassification, Distribution, Pollution and deforestation | **Chemistry**Analysis & Earths ResourcesChromatography and gas tests.Life cycle assessments,earth’s atmosphere and climate change | **Physics**Magnetism and electromagnetismMagnetic fields, Flemings left hand rule and electromagnetism. | **Revision and Exam Preparation**Students will complete revision activities to develop further knowledge and test areas of weakness from mock exam testing. |
| **SMSC/Cultural Capital/Character/FBV- outline specific areas that are covered in this unit** | Impact of pollutions on ecosystems. Humans responsibility to avoid pollution and stop deforestation. Sustainability.  | The importance of fossil fuels to human society and the impact their usage is having | The use of magnetic fields in navigation. | The Importance of revising for GCSE Science.The use of GCSE science in college applications.How to deal with stress during exam times. |
| **Assessment Opportunities** | Each unit is assessed by an end of topic test.Mock Exam Autumn Term  | Mock Exam Early Spring Term.Exam questions and QWC questions during lesson activities.  |
| **Links to other units in KS3/4.** | Yr 7- ZooYr 8- DinosaursYr 9- Chemical ReactionsYr 10- Biological reactionsYr 10 - Inheritance, variation & evolution | Yr 7- ScientistsYr 7- EarthYr 8- CSIYr 9- Atoms | Yr 8 DiscoYr 8 PowerYr 9- ElectricityYr 10 - Waves | Prior GCSE Content. |